

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
15 January 2004 (15.01.2004)

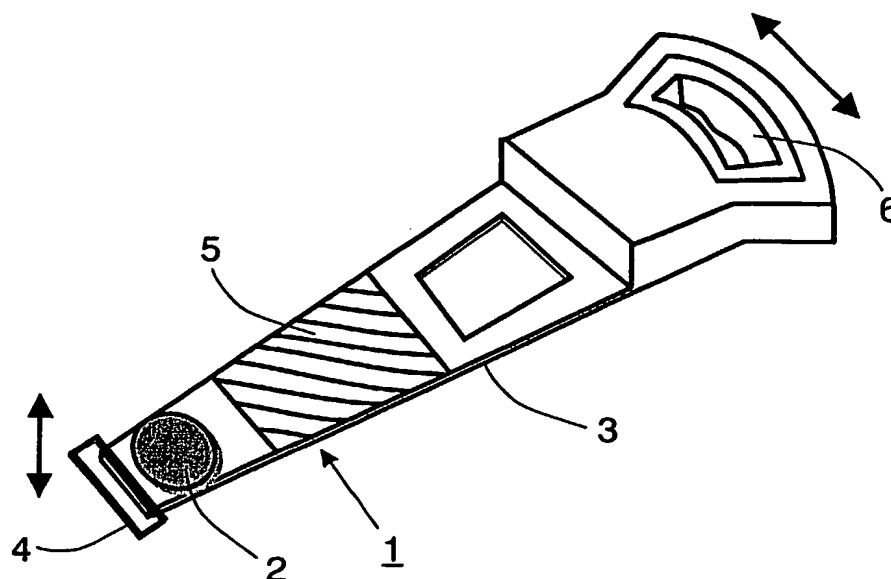
PCT

(10) International Publication Number  
**WO 2004/006230 A1**

- (51) International Patent Classification<sup>7</sup>: **G11B 7/00**, 11/10, 13/04, 5/55, 5/56
- (21) International Application Number: PCT/IB2003/002833
- (22) International Filing Date: 13 June 2003 (13.06.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
02077720.7 8 July 2002 (08.07.2002) EP
- (71) Applicant (for all designated States except US): **KONINKLIJKE PHILIPS ELECTRONICS N.V.** [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **GOOSSENS, Hendrik, J.** [NL/NL]; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). **CLOOSTERMAN, Maria, B., G.** [NL/NL]; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).
- (74) Agent: **SCHRIJNEMAEEKERS, Hubert, J., M.**; Philips Intellectual Property & Standards, Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:  
— with international search report  
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: LENS DRIVING DEVICE FOR OPTICAL READ AND/OR WRITE SYSTEM AND OPTICAL READ/WRITE SYSTEM



(57) Abstract: A lens driving device (1) or an optical read and/or write system comprises a mechanical structure (3) with an objective lens (2) and an actuator (4, 4', 6) for controlling the lens position. The lens driving device comprises a further actuator (5, 5a, 5b, 5') on or near the mechanical structure so as to at least partially compensate motion generated by the first-mentioned actuator (4, 6).

**WO 2004/006230 A1**



---

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## INTERNATIONAL SEARCH REPORT

Internat Application No

PCT/IB 03/02833

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G11B7/00 G11B11/10 G11B13/04 G11B5/55 G11B5/56

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G11B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 336 687 A (MITSUBISHI ELECTRIC CORP) 11 October 1989 (1989-10-11) the whole document ---	1-9
A	US 6 233 124 B1 (MURPHY JAMES MORGAN ET AL) 15 May 2001 (2001-05-15) the whole document ---	1-9
A	US 6 088 194 A (WHITE MATTHEW T ET AL) 11 July 2000 (2000-07-11) the whole document ---	1-9
A	US 4 561 079 A (NARUMI ICHIRO) 24 December 1985 (1985-12-24) the whole document -----	1-9

☐ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*&\* document member of the same patent family

Date of the actual completion of the international search

6 November 2003

Date of mailing of the international search report

14/11/2003

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Kyranos, E

## INTERNATIONAL SEARCH REPORT

Item # Application No

PCT/IB 03/02833

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 0336687	A	11-10-1989	DE	68921087 D1	23-03-1995
			DE	68921087 T2	05-10-1995
			DE	68926717 D1	25-07-1996
			DE	68926717 T2	23-01-1997
			EP	0336687 A2	11-10-1989
			EP	0555943 A2	18-08-1993
			JP	2029653 C	19-03-1996
			JP	2289982 A	29-11-1990
			JP	7062946 B	05-07-1995
			JP	2664347 B2	15-10-1997
			JP	7311991 A	28-11-1995
			JP	2739043 B2	08-04-1998
			JP	7302449 A	14-11-1995
			US	5247493 A	21-09-1993
			US	5305294 A	19-04-1994
-----					
US 6233124	B1	15-05-2001	NONE		
-----					
US 6088194	A	11-07-2000	NONE		
-----					
US 4561079	A	24-12-1985	DE	3332467 A1	08-03-1984
			GB	2126750 A , B	28-03-1984
-----					